FE Label MPG Calculations For Electric Vehicles (with Voluntarily lowered/increased values)

Please Enter: **(Uses 2017 and later model year derived 5-cycle coefficients (for reference calculations only) from EPA Guidance letter CD-15-15, June 22, 2015)**

Model Year:	2023
Manufacturer Name:	TYX
Model Name	bZ4X AWD
Test Date:	1/25/2022, 9/28/2021

Values in Yellow fill are normally used on FE Labels (window stickers)
Values in Blue fill are voluntarily decreased/increased values

D. Good January 19, 2022

Enter the EPA approved 5-cycle Adjustment Factor per SAE J1634 (July 2017): 0.70000 <-------- (round to 5 decimal places);
(Enter 0.70 if not using the SAE J1634 5-cycle method) (Orange background = too many decimal places)

I. Calculate Electric vehicle FE Label city, Hwy, Combined FE values using the SAE J1634 5-cycle Adjustment Factor or the 0.7 Adjustment Factor:

Enter unadjusted kW-hr/100mi Values (in red text blocks) rounded to 5 decimal places as determined from SAE J1634:

		-----Unadjusted Values----- City (to 0.1mpg)	Highway (0.1mpg)	Combined unadjusted	Units
Elect veh FE	unrounded kW-hr/100 mi*	19.77954	24.00826	21.6825	kW-hr/100 mi
Elect veh FE	converted to mpg	170.4	140.4	155.4526	mpg

*Round to Input kW-hr/100 mi values to 5 decimal places
(Orange background = too many decimal places)

	-----Adjusted Values----- City	Hwy	Combined	Units	
Calculate derived 5-cycle mpg:	91.8	80.6	86.4	mpg	for EPA (reference only)
convert back to kW-hr/100 mi:	36.7	41.8	39.0	kW-hr/100 mi	- Derived 5-cycle (EPA--for reference only)
Percent adjustment (D5C) mpg:	46.1%	42.6%	44.4%	percent	for EPA (reference only)
MPG w/SAE J1634 (5-cycle) or 0.7 Adjustment Factor:	119.2800	98.2800	108.8168	MPG (5-cycle method)	
convert back to kW-hr/100 mi:	28.2570	34.2949	30.9741	kW-hr/100 mi (5-cycle method)	

2023MY Label Values:

Rounded MPG Using SAE J1634 (5-cycle) or 0.7 Adjustment Factor:	119	98	109
Rounded kW-hr/100 mi Using SAE J1634 (5-cycle) or 0.7 Adjustment Factor:	28	34	31
**Voluntarily Reduced MPG values shown on Label ----------> **	114	94	104
**Voluntarily Increased kW-hr/100 mi values ----------> **	30	36	32

<-------- Enter only voluntarily reduced combined MPG (or leave blank);
(other values are automatically calculated)

II. Calculate the adjusted electric vehicle driving ranges using the SAE J1634 5-cycle Adjustment Factor or the 0.7 Adjustment Factor:

Enter unadjusted City & Hwy Range Values in miles (in red text blocks) as determined from SAE J1634:

	City Range	Hwy Range	Range	Range	Units	Method:
Calculate unadjusted combined driving range*:	365.866	301.467	336.8865	337	miles	Unadjusted (SAE J1634)
Calculate adjusted driving range (2017 D5C method, No Cap):	197.1	173.1	187.2403	187	miles	Adjusted driving range (derived 5-cycle method, No Cap) calculated for reference only
Calculate adjusted driving range (5-cycle or 0.7 Adj Factor):	256.1	211.0	235.8205	236	miles	(Adjusted driving range using 5-cycle or 0.7 Adjustment Factor)
	247.6	204.0	228.0	228	miles	<----------Enter Voluntary Reduced (Combined) Range Value shown on label

*Round input city and hwy range values to 3 decimal places
(Orange background = too many decimal places)

III. Calculate Electric vehicle annual fuel cost and 5-year savings, per 40 CFR 600.311-12(e)

2017 and later model year MPG Factors:
ref. 40 CFR 600.210-08 and CD-15-15 (June 22, 2015)

City Intercept:	0.004091
City Slope:	1.1601
Hwy Intercept:	0.003191
Hwy Slope:	1.2945

Enter Average 2023MY 5-year Fuel Cost: $8,000 (Whole number)
Enter 2023MY U.S. average electricity cost: $0.14 per kw-hr (2 decimal places)
(from CD-2022-01 for 2023 model year)
Calculate unrounded adjusted combined miles/kw-hr: 3.125 mi/kw-hr

Petroleum Equivalency Factor for FE Labels;
ref. 40 CFR 600.002 "Gasoline gallon equivalent" definition

33,705 watt-hr/gallon

Annual Miles	Cost	Units	Unrounded Annual Fuel Cost*	Method	2023 Label Rounded Annual Fuel Cost	2023 Label 5-year Amount You Save:
15,000	$0.14	per kw-hr	$819.00	Derived 5-cycle method, No Cap (for reference only)	$800.00	$4,000
15,000	$0.14	per kw-hr	$672.00	(Using SAE J1634 5-cycle or 0.7 Adjustment Factor)	$650.00	$4,750

*Note: Annual fuel costs should be ASTM rounded to the nearest $50.

**Note: These values are used on the window stickers.
(They may be different from the www.fueleconomy.gov values,
because www.fueleconomy.gov uses a floating fuel cost).